

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

**Norman C. Fawley**

Application No.: 10/695,252

Filed: October 27, 2003

For: **METHOD FOR BENDING COMPOSITE  
REINFORCED PIPE**

Art Group: 1732

Examiner: Patrick Butler

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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**REPLY BRIEF**

Dear Sir:

The Appellant submits the following Reply Brief pursuant to 37 C.F.R. § 41.41 for consideration by the Board of Appeals and Interferences ("Board"). This Reply Brief is responsive to the Examiner's Answer of December 9, 2009.

## REMARKS

The Examiner's Answer mailed December 9, 2009 has been received and carefully noted. Claims 1, 4, 6-10, 17, and 18 are pending and currently on Appeal. Favorable reconsideration of the pending claims is respectfully requested in view of the following comments.

### **I. Rejection of Claims 1, 4, 6-10, 17, and 18 Under 35 U.S.C. § 112, First Paragraph**

#### **1. Claims 1, 4, 6-10, 17 and 18**

Claims 1, 4, 6-10, 17 and 18 are rejected under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the written description requirement. The Examiner alleges that the phrase "placing a heater proximate to...a plurality of longitudinally displaced locations" as recited in claim 1 is not supported in the Specification as filed. Specifically, the Examiner states that this element of claim 1 includes having multiple heaters which is allegedly not disclosed in the Specification as filed. As described in the Appeal Brief, the Examiner is unreasonably interpreting the elements of claim 1 in contradiction of § 2111 of the Manual of Patent Examining Procedure (M.P.E.P.).

The M.P.E.P. states that a patent specification satisfies the written description requirement when it discloses a claimed invention in sufficient detail so that one skilled in the art can "reasonably conclude" that the applicant had possession of the claimed invention at the time of filing. See M.P.E.P. § 2163(I). The court in ICU Medical v. Alaris Medical Systems held that a claim may fail to comply with the written description requirement if there is an example embodiment that is within the scope of the claim that is not sufficiently described in the Application as filed. See ICU Medical v. Alaris Medical Systems (CAFC 2008-1077).

Further, "[d]uring patent examination, the pending claims must be 'given their broadest reasonable interpretation consistent with the specification.'" M.P.E.P. § 2111 quoting Phillips v. AWH Corp., 75 USPQ2d 1321 (Fed. Cir. 2005). "The broadest

reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach.” M.P.E.P § 2111 citing In re Cortright, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999). “Ordinary, simple English words whose meaning is clear and unquestionable, absent any indication that their use in a particular context changes their meaning, are construed to mean exactly what they say.” M.P.E.P. § 2111.01(I) citing Chef America, Inc. v. Lamb-Weston, Inc., 69 USPQ2d 1857 (Fed. Cir. 2004).

In the Examiner’s Answer, the Examiner argues that the written description requirement is not met based on an example embodiment that is allegedly within the scope of claims 1, 4, 6-10, 17 and 18 and also allegedly not supported by the Application as filed. See Examiner’s Answer, Pages 10 and 11. The Examiner concludes that since there is one embodiment within the scope of claims 1, 4, 6-10, 17 and 18 that is not supported by the Application as filed, claims 1, 4, 6-10, 17 and 18 do not comply with the written description requirement of 35 U.S.C. §112, first paragraph. However, the Examiner’s analysis of the claims relies on an interpretation of one of the terms of the claims that is contrary to its plain meaning, specifically the Examiner has taken the position that the term “a heater,” encompasses multiple heaters.

The ordinary plain meaning of “a heater” as would be understood by a person of ordinary skill in the art is a *single* heater and not a plurality of heaters as argued by the Examiner, because the term “a heater” is singular noun and not plural as alleged by the Examiner. It is well known that the plural of the word “heater” is “heaters.” It is also clear from a reading of the claim in context that the noun is not modified by common claim constructions such as “a plurality of” that would change the meaning of the term “a heater.” Instead of utilizing the plain meaning of “a heater” as required by M.P.E.P. § 2111, the Examiner adds limitations to the claims whole cloth to make a term that is clearly in the singular into a plural term and then alleging that this plural term is not supported by the specification. Further, the Examiner has not provided any clear

rationale as to why the clearly singular term “a heater” should be interpreted as a plural term “heaters.” As best as can be discerned, the Examiner appears to imply that it is impossible for “a heater” to be placed proximate to a plurality of longitudinally displaced locations and that this somehow justifies the interpretation of a singular term as a plural term. However, this implication is without merit or support. In fact, the Examiner has admitted that an embodiment is supported by the specification where a single heater is moved relative to the pipe demonstrating that an embodiment consistent with the plain meaning of the terms exists and belying any need to contort the plain meaning of the claims. Accordingly, the Examiner’s example embodiment is not within the scope of claims 1, 4, 6-10, 17 and 18 and the Examiner has failed to establish a *prima facie* case that claims 1, 4, 6-10, 17 and 18 fail to comply with the written description requirement of 35 U.S.C. § 112, first paragraph, because the Examiner’s interpretation of the claims is not reasonable.

Additionally, the Appellant provided several example interpretations of the elements of claims 1, 4, 6-10, 17 and 18 in the Appeal Brief, which use the ordinary plain meaning of “a heater” and are supported by the Application as filed, but the Examiner has ignored these examples in favor of an example which changes the plain meaning of the words of claims 1, 4, 6-10, 17 and 18. In the Examiner’s Answer, the Examiner argues that Appellant’s example that the cited elements of claims 1, 4, 6-10, 17 and 18 can be reasonably interpreted as a single heater that is large enough to be proximate to multiple longitudinally displaced locations is beyond the scope of the Application as filed. See Examiner’s Answer, Pages 10 and 11. The Appellant respectfully disagrees. The Application does have support for this interpretation of claims 1, 4, 6-10, 17 and 18. For example, Figure 1 of the Application shows heater 30 surrounding a portion of pipe section 12. Heater 30 extends longitudinally along pipe section 12. This extension along the longitudinal axis of pipe section 12 allows heater 30 to be proximate to a plurality of longitudinally displaced locations along pipe sections 12. Accordingly, contrary to the

assertion made by the Examiner, the Application as filed has proper support for the interpretation of claims 1, 4, 6-10, 17 and 18 provided by the Appellant in the Appeal Brief.

Thus, for at least the reasons provided above and in the Appeal Brief, based on a reasonable interpretation of the elements of claims 1, 4, 6-10, 17 and 18, the Appellant submits that “placing a heater proximate to...a plurality of longitudinally displaced locations” is supported by the Specification as filed in compliance with 35 U.S.C. § 112, first paragraph. Accordingly, it is respectfully requested that the rejections of claims 1, 4, 6-10, 17 and 18 under 35 U.S.C. § 112, first paragraph be reversed.

## **II. Rejection of Claims 1, 4, 6-10, 17, and 18 Under 35 U.S.C. § 103(a)**

Claims 1, 4, 6, 7 and 9 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Publication No. 2004/0060497 by Smith *et al.* (hereinafter “Smith”) in view of U.S. Patent No. 4,132,104 issued to Clavin (hereinafter “Clavin”) and European Application No. 1 086 760 issued to Lewis (hereinafter “Lewis”) as evidenced by *Handbook of Thermoplastic Elastomers* by Drobny (hereinafter “Drobny”).

Claims 8 and 10 are rejected under 35 U.S.C. §103(a) as being unpatentable over Smith in view of Clavin and Lewis as evidenced by Drobny as applied to claim 1 and further in view of U.S. Patent No. 4,255,378 issued to Miller *et al.* (hereinafter “Miller”).

Claims 17 and 18 are rejected under 35 U.S.C. §103(a) as being unpatentable over Smith in view of Clavin and Lewis as evidenced by Drobny, and further in view of U.S. Patent No. 5,435,867 issued to Wolfe *et al.* (hereinafter “Wolfe”).

### **1. Claims 1, 4, and 6-10**

Independent claim 1 recites “bending the pipe incrementally at the plurality of longitudinally displaced locations, the longitudinally displaced locations separated by a distance equal to approximately ¼ of a diameter of the pipe” (emphasis added). The

combination of Smith, Clavin, Lewis and Drobny does not teach or suggest these elements for at least the reasons set forth in the Appeal Brief. The Examiner maintains his position in the Examiner's Answer, but the Examiner has failed to establish that the cited prior art discloses separating bends by a distance equal to approximately  $\frac{1}{4}$  of a diameter of the pipe.

In the Examiner's Answer, the Examiner appears to acknowledge that the cited references fail to explicitly disclose separating bends by a distance equal to approximately  $\frac{1}{4}$  of the diameter of the pipe. See Examiner's Answer, Pages 5, 6, 11, and 12. Instead, the Examiner appears to draw an inference from the combination of Lewis and Clavin to disclose this element of claim 1. See Id. However, the Appellant submits that this inference is not supported by the disclosure of the prior art references.

Clavin discloses bending a pipe. See Clavin, Column 5, Lines 3-5. Bends may be "from very slight bends of less than one degree per arc foot of pipe up to about ten degrees per arc foot of pipe." Id. Lewis discloses bending a pipe through cumulative  $\frac{1}{4}^{\circ}$  bends, but is silent as to the distance between bends. See Lewis, Paragraphs [0029] and [0031]. The Examiner concludes that it would be obvious to incrementally bend the pipe of Clavin in  $\frac{1}{4}^{\circ}$  increments at an incremental distance of  $\frac{1}{4}$  the diameter of the pipe based on Lewis. See Examiner's Answer, Page 11.

However, the Examiner's conclusion assumes that there is a relationship between the degree of bends and the distance between bends in Clavin such that dividing the degree of bends by four also divides the separation between bends by four. However, there is no support for this assumption in the prior art, because the prior art is silent as to such a direct relationship between the degree and separation of bends. The Appellant submits that the Examiner is basing this assumption to bend a pipe at increments equal to  $\frac{1}{4}$  of the diameter of the pipe on the Appellant's disclosure, because there is no teaching or suggestion in the cited prior art to separate bends as recited in claim 1.

Instead, Clavin discloses that regardless of the degree of bend (*i.e.*  $\frac{1}{4}^\circ$  or  $1^\circ$ ) the distance between bends remains constant at one foot. See Clavin, Column 5, Lines 3-5. Thus, the Examiner's assumption that incrementally bending the pipe of Clavin in  $\frac{1}{4}^\circ$  increments implies separating bends by a distance of  $\frac{1}{4}$  the diameter of the pipe is unsupported by the cited prior art, because the cited prior art instead discloses separating bends by a foot regardless of the degree of bend.

Based on the above arguments and the arguments presented in the Appeal Brief, the Appellant submits that the Examiner has failed to establish that the combination of Smith, Clavin, Lewis and Drobny teaches or suggests these elements of claim 1.

Further, in the Examiner's Answer, the Examiner argues that the Appellant has failed to address the motivation noted in the Final Office Action to combine Lewis's bend increments with Smith's pipe. See Examiner's Answer, Pages 11 and 12. However, the Appellant is not arguing against the Examiner's reasons for combining the references and accordingly does not need to rebut the Examiner's motivation for combining the references.

In the Examiner's Answer, the Examiner further argues that the Appellant has attacked the references individually instead of in combination. However, the arguments presented by the Appellant each examine the references in combination as shown above in an effort to establish that the combination of the references fails to disclose an element of the claims. Thus, the Appellant did not attack the references individually.

Based on the arguments presented above and in the Appeal Brief, the Appellant submits that the combination of Smith, Clavin, Lewis and Drobny fails to disclose "bending the pipe incrementally at the plurality of longitudinally displaced locations, the longitudinally displaced locations separated by a distance equal to approximately  $\frac{1}{4}$  of a diameter of the pipe" as recited in claim 1. Therefore, the Examiner has not established a *prima facie* case of obviousness of claim 1 based on the combination of

Smith, Clavin, Lewis and Drobny. Accordingly, the Appellant respectfully requests that this rejection be reversed.

Claims 4, 6, 7, and 9 depend from independent claim 1 and incorporate the limitations thereof. For at least the aforementioned reasons regarding independent claim 1, the Examiner has not established a *prima facie* case of obviousness of dependent claims 4, 6, 7, and 9 based on the combination of Smith, Clavin, Lewis and Drobny. Accordingly, it is respectfully requested that these rejections be reversed.

Claims 8 and 10 depend from independent claim 1 and incorporate the limitations thereof. For at least the aforementioned reasons regarding independent claim 1, the Examiner has not established a *prima facie* case of obviousness of dependent claims 8 and 10 based on the combination of Smith, Clavin, Lewis and Drobny. Further, the Examiner has not cited and the Appellant has been unable to locate any sections of Miller which cure the deficiencies of the combination of Smith, Clavin, Lewis, and Drobny. Accordingly, it is respectfully requested that these rejections be reversed.

## **2. Claims 17 and 18**

Dependent claim 17 recites “the reinforcement fibers are positioned circumferentially and longitudinally along the pipe.” The combination of Smith, Clavin, Lewis, Drobny and Wolfe does not teach or suggest these elements for at least the reasons set forth in the Appeal Brief. The Examiner maintains his position in the Examiner’s Answer.

In response to the Appellant’s arguments in the Appeal Brief, the Examiner contends that a preferred embodiment does not teach away from a broader disclosure or a non-preferred embodiment. See Examiner’s Answer, Pages 12 and 13. The Appellants respectfully disagree with the Examiner’s contentions as they are applied to Wolfe and the elements of claim 17.



“A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention” (emphasis in original). M.P.E.P. § 2141.02 citing W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). Further, “[i]t is improper to combine references where the references teach away from their combination.” In re Grasselli, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983).

In the present case, although Wolfe discloses that reinforcement fibers can be positioned circumferentially and longitudinally along a pipe, Wolfe specifically discloses that this positioning of fibers should not be used when the pipe will be flexed or bent. See Wolfe, Column 3, Lines 15-35. Particularly, Wolfe discloses that the arrangement of a reinforcement structure using a combination of longitudinal fibers and circumferential fibers with a non-static pipe is problematic. See Wolfe, Column 3, Line 56 through Column 4, Line 44. According to Wolfe, by using a differing directional orientation of fiber reinforcement (i.e. longitudinal fibers and circumferential fibers), the resulting reinforced structure has an inconsistent strength and is unpredictable when bent. See Id. Thus, based on Wolfe a person of ordinary skill in the art would not be motivated to position reinforcement fibers circumferentially and longitudinally along a pipe, if the pipe is to be bent, because this arrangement of fibers would be detrimental to the reinforcement structure of the pipe. In the Examiner’s Answer, the Examiner fails to apply the disclosure of Wolfe to the claim *as a whole*, because the Examiner does not consider that claim 17 is a method for *bending pipe* and Wolfe specifically advises against using such fibers in a pipe that is to be bent as recited in claim 17. The Appellant submits that a person of ordinary skill in the art would not combine Wolfe with the other prior art references to arrive at the method of claim 17, because Wolfe specifically criticizes bending a pipe with reinforcement fibers positioned “circumferentially and longitudinally along the pipe.”

Further, in the Examiner's Answer, the Examiner argues that Wolfe discloses a configuration of fibers that increases the strength of a pipe and the fact that Wolfe also discloses that this configuration should not be used for pipes that will be bent is inconsequential, because the reasons to combine (*i.e.* increasing the strength of the pipe) outweigh the secondary considerations (*i.e.* positioning fibers circumferentially and longitudinally along a pipe should not be used when the pipe will be flexed or bent). See Examiner's Answer, Pages 12 and 13. However, the Examiner has failed to view these secondary considerations in view of the other elements of the claim and the impact they would have on a person of ordinary skill in the art as required by M.P.E.P. § 2141.02. The Appellant submits that a person of ordinary skill in the art, whose goal is to develop a method for bending a pipe, would not arrange fibers along a pipe to strengthen the pipe during a bend based on Wolfe, because Wolfe discloses that this arrangement would render the pipe weak for the purpose of the claimed method (*i.e.* bending the pipe). Thus, the secondary considerations in this case outweigh the reasons to combine, because the benefits of a strengthened pipe relied upon as the reason to combine the references is directly impacted and negated by the secondary considerations that bending a pipe with the fiber positioning described in Wolfe would in fact weaken the pipe.

Based on the arguments presented above and in the Appeal Brief, the Appellant submits that the combination of Smith, Clavin, Lewis, Drobny and Wolfe does not teach or suggest the reinforcement fibers are positioned circumferentially and longitudinally along the pipe" as recited in claim 17. Accordingly, the Appellant respectfully requests that this rejection be reversed.

Claim 18 depends from claim 17 and incorporates the limitations thereof. For at least the aforementioned reasons regarding claim 17, the combination of Smith, Clavin, Lewis, Drobny and Wolfe does not teach or suggest each and every element of

dependent claim 18. Accordingly, the Appellant respectfully requests that this rejection be reversed.

For the reasons set forth above, the Appellant respectfully requests that the Board overturn the rejections of claims 1, 4, 6-10, 17, and 18.

Respectfully submitted,

BLAKELY SOKOLOFF TAYLOR & ZAFMAN LLP

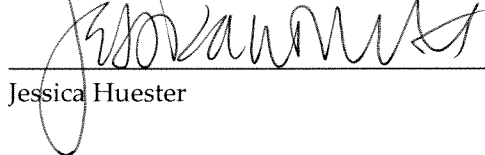
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